Active Learning with Technology: Myths, Magic, and Mucho Motivation

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Nature AND Nurture: Pedagogy

Next Generation of Students

Tech Creates Bubble for Kids
Alejandro Gonzalez, USA TODAY, Updated 6/20/2006 10:34 AM ET

Yahoo News
Love me, love my blog," as Netorati couple-surf
BY SARA LEDWITH Thu Aug 3, 8:30 AM ET

• Nick Currie and his girlfriend Shizu Yuasa (R) surf the internet over breakfast in Tokyo in this handout photo. As the Internet evolves -- with its webcams, iPods, Instant Messaging, broadband, wi-fi and weblogs -- its image as a relationship-wrecker is changing. Now a sociable habit is emerging among the Netorati: couple-surfing. (Nick Currie/Handout/Reuters)

• "For my birthday, he upgraded my RAM and I thought it was incredibly romantic," writes Jess.

Bonk's Addiction Q'er

1. Who has 2 or more cell phones with Internet access?
2. Who has 2 or more laptop computers with wireless connections?
3. Who is on email in the morning? At noon? Who does it at night?
4. Who suffers from nervous tension when you cannot get on email?
5. Who is on the Web right now?
I. Student Technology Myths
1. They all are Web 2.0 savvy and equipped.
2. Some will dominate and intimidate others.
3. Will be too off task and social online.
4. Online cheating is the key reason not to teach with tech.
5. Online students are located far away.

Myths: No Models or Best Practices

II. Magic....

Magic Pens! (The Pulse from Livescribe)

The Growth of the Online programs (IU and Virtual Florida School)
Magjuka helped launch Kelley Direct in 1999 with a class of 14 students. Today, the program serves 1,250 students.
FLVU from a few dozen in 1997 to 6,000 in 2001 to 52,000 today.
Capella Tower
225 South Sixth Street, Minneapolis
Formerly, the "Halo"

What if our minds were on fire for learning?

Activities Part I: 10 Learner-Centered Technology Ideas

Task
- Ideas definitely Can Use (Circle or write down)
- Ideas you might use (check off or write down in a separate column)
- Ideas you cannot use (cross off or put at the bottom)

Learner-Centered and Active Learning Principles

1. Authentic/Raw Data
2. Student Autonomy/Inquiry
3. Make Relevant/meaningful/Interests
4. Link to and Build on Prior Knowledge
5. Provide Choice and Challenge
6. Act as a Facilitator and Co-Learner
7. Foster Social Interaction and Dialogue
8. Embed Problem-Based and Student Generated Learning and Inquiry
9. Encourage Multiple Viewpoints and Perspectives
10. Foster Collab, Negotiation, & Reflection

1. Anchored Instruction (find anchoring event (CTGV, 1990?))
   (L/M = Cost, M = Risk, M = Time)
   - In a synchronous lecture interrupt it with a summary video (could be a movie clip) explaining a key principle or concept.
   - Refer back to that video during lecture.
   - Debrief on effectiveness of it.
2. Cool Resource Provider

(Bonk, 2004) Capture and Videostream Lectures
(e.g., Apreso CourseCaster)

- Have students sign up to be a cool resource provider once during the semester.
- Have them find additional paper, people, electronic resources, etc.
- Share and explain what found with class via synchronous meeting or asynchronous discussion post.

3. ORL or Library Day

(L = Cost, M = Risk, M/H = Time)

(Bonk, 1999)

- Have students spend a day in the library or online finding and summarizing a set number of articles.
- Have them bring to class or post abstracts to an online forum.
- Share in small groups interested in similar topics.
- Perhaps give each student 1-2 minutes to describe what found in a chat.

4. Online Warm-ups Activities

Just-In-Time-Teaching (JITT)

http://webphysics.lupui.edu/jitt/jitt.html

5. Paired Weblog Critiques

6. Concept Mapping Tools

(VUE, Bubbl.us, Cmap, Freemind)

7. Exploration and Demonstration:

Virtual Fieldtrip, Tours, Timelines

http://simile.mit.edu/timeline/
8. Online Portal Explorations

9. Online Apprenticeship: Electronic Guests & Mentoring
   (Simon Fraser University News:

10. Referenceware and Terminology Exercises
    Online (e.g., Websters, Visual Thesaurus)
    http://www.visualthesaurus.com/
    ($2.95/month; $19.95/year)

Activities Part II.
Motivational Ideas

Three Most Vital Skills
The Online Teacher, TAFE, Guy Kemphal-Bell (April, 2001)

- Ability to engage the learner (30)
- Ability to motivate online learners (23)
- Ability to build relationships (19)
- Technical ability (18)
- Having a positive attitude (14)
- Adapt to individual needs (12)
- Innovation or creativity (11)

Intrinsic Motivation

"...innate propensity to engage one's interests and exercise one's capabilities, and, in doing so, to seek out and master optimal challenges
(i.e., it emerges from needs, inner strivings, and personal curiosity for growth)

TEC-VARIETY Model for Online Motivation and Retention

1. Tone/Climate: Psych Safety, Comfort, Belonging
2. Encouragement, Feedback: Responsive, Supports
3. Curiosity: Fun, Fantasy, Control
4. Variety: Novelty, Intrigue, Unknowns
5. Autonomy: Choice: Flexibility, Opportunities
6. Relevance: Meaningful, Authentic, Interesting
7. Interactive: Collaborative, Team-Based, Community
8. Engagement: Effort, Involvement, Excitement
9. Tension: Challenge, Dissonance, Controversy
10. Yields Products: Goal Driven, Products, Success, Ownership

1. Tone/Climate:

A. Coffee House Expectations
1. Have everyone post 2-3 course expectations
2. Instructor summarizes and comments on how they might be met

B. Public Commitments: Have students share how they will fit the coursework into their busy schedules
1. Tone/Climate: C. Video Course Intros (examples from Northern Virginia Community College and Indiana University KD (online MBA) program)

2. Encouragement, Feedback, etc.: A. Critical/Constructive Friends, Email Pals...

2. Encouragement, Feedback, etc.: B. Instructor Presentation in Synchronous Sessions (Breeze, Eluminate, WebEx, etc.)

2. Encouragement, Feedback, etc.: C. Thinking About the Readings (TARS) JIT; Claude Cookman, IU, Photography Class

3. Curiosity, Fun: A. Games e.g., Online Jeopardy Game Games2Train: The Challenge; Thiagi.com

4. Variety, Novelty: A. Teaching with Twitter
4. Variety, Novelty:
   B. Video Streamed Lectures & Expert Commenting

5. Autonomy, Choice: B. Read, Listen, etc. to online books (e.g., "An International Episode" by Henry James)

5. Autonomy, Choice: C. Online Literature Search (Class Google Jockeys)
The Electronic Literati, in Search of a Voice, June 1, 2007, Chronicle of Higher Education, Jeffrey Young (links to text, soundtracks, video clips, etc.)

5. Autonomy, Choice: C. Multiple Topic Forums or Task Options
   - Generate multiple discussion prompts and ask students to participate in 2 out of 3
   - Provide different discussion "tracks" (much like conference tracks) for students with different interests to choose among
   - List possible topics and have students vote (students sign up for lead diff weeks)
   - Have students list and vote.

6. Relevance: Meaningfulness:
   A. Authentic Data Analysis

   Jeanne Sept, IU, Archaeology of Human Origins; Components: From CD to Web
   - A set of research q's and problems that archaeologists have posed about the site
   - A complete set of data from site
   - Students work collab to interpret age of site
   - Interpret of ancient environments
   - Analyze artifacts/fossils from site
6. Relevance: Meaningfulness: B. Real World Problems (PBL online): Real-time Cases

7. Interactive, Collaborative: A. Online Language Learning
    (Mixxer, Livemocha, Friends Abroad)

8. Engagement: A. Text Messaging
    Students at the Mennonite Centre for Newcomers are testing mobile learning - downloading an English grammar lesson, then answering a series of multiple choice, or true or false questions. (Edmonton)

8. Engagement: B. Student Self-Testing (e.g., Calm Chemistry)

9. Tension, Challenge, etc.: A. Online Role Play of Famous People, Mock Trial, Debates, etc.
9. Tension, Challenge, etc.:  
B. Scenario Learning (Emmis Communications example)


99 seconds: What have you learned so far?  
• Solid and Fuzzy in groups of two to four

Activities Part III.  
Addressing Learning Styles

Why Address Learning Styles?  
• Promotes reflection on teaching  
• Move from just one mode of delivery  
• View from different viewpoints  
• Offer variety in the class  
• Might lower drop-out rates  
• Fosters experimentation

Kolb (1984)  
• According to Kolb, effective learning involves four phases:  
  – from getting involved (Concrete Experience) to  
  – listening/observing (Reflective Observation) to  
  – creating an idea (Abstract Conceptualization) to  
  – making decisions (Active Experimentation).  
• A person may become better at some of these learning skills than others; as a result, a learning style develops.
The R2D2 Method

1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)

1a. Documents on Web
Scribd: http://www.scribd.com/
1b. Vocabulary Practice Feeds the World
A Grain of Rice: A Bloomington man's computer vocab game feeding the world, Herald Times, Wednesday February 6, 2008
Mike Leonard

1c. Online Tutorials, Help, Announcements, Q&A, and FAQs

2d. The Complete Works of Charles Darwin

2a. Post Model Answers

2b. Practitioner Feedback: Asynchronous Threaded Discussion plus Sync Expert Chat (e.g., Starter-Wrapper + Sync Guest Chat) (L/M = Cost, M = Risk, M = Time)
3. Visual Learners

- Visual learners prefer diagrams, flowcharts, timelines, pictures, films, and demonstrations.

3a. Online Anatomy and Physiology

3b. Map Mash-ups (e.g., Shakespeare’s Global Globe)


3d. Animations, Video Clips, Audio, Pictures, Web Resources, etc.

3e. Electronic Cameras and Maps
3f. Online Timelines
(US Presidents)

3g. Tracking Live Internet Thawing:
A Colossal of an Idea

Deep-Sea Behemoth
Captain John Bennett examines the world’s first intact adult male
colossal squid on board his New Zealand fishing boat in September, 2007,
in the Ross Sea near Antarctica. The gigantic sea creature weighs a
world record 1,000 pounds. After being frozen whole for over a year,
scientists at New Zealand’s national museum will thaw the squid for
further study.

3i. Vodcast for Medical Training
(e.g., “SonoSite on the small screen: The Bothell-based
company uses vodcasts for its ultrasound scanner training.”

3j. Expert Mentoring Online in Art and Design
(COFA Online, Omnium Project, Creative Waves—online
graphics and photomedia project)

3k. Anchored Instruction and Shared Online Video:
Assign Videos to Watch and Reflect on (YouTube,
Monkey See, TeacherTube, CurrentTV)

3l. Historical Documents
discoverbabylon.org

• In its final form, the multi-player game will let you
march through three-dimensional recreations of
the first city-states, around 3000 B.C., the first empires,
around 2300 B.C., and
finally the famous Iron Age
empire of Assyria...offers
three-dimensional walk-
throughs of sites in the
Valley of the Kings.
3m. Flash, 3-D Visualization, & Laboratory Software

4. Tactile/Kinesthetic Learners
   - Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.

4a. Romantic Poetry Project
   (Professor Mike Phillipson, English at Bowdoin College)

4b. YouTube to Memorize Sonnets and Poems

4c. Videoconferencing with Hearing Impaired Students Online
   - College students tutoring high schools on their homework
   - Instructors observing how teacher education students are doing in field placements (practice presentation and communication skills)
   - Interpret speaker via Webcam
4d. Virtual Worlds/Virtual Reality/MMOG
Harvard Law School (Charles & Rebecca Nesson) Chronicle of Higher Ed (open to the public)

4e. Survey Research and Market Analysis
(e.g., WebSurveyor, Zoomerang, SurveyShare, SurveyKey)

4f. Mobile Learning and Social Networking
(e.g., Mixi, Yayoi Anzai, Professor Japan)

4g. Virtual Crime Scene:
Explore Murder Evidence
(Arjuna Multimedia, Bloomington, IN)

Next up: The MATRIX!!!!!!!!!!!
- Mobile
- Auditory
- Thought-stimulating
- Reflective/Real-World
- Visually Interactive
- Extremely Hands-on

It's Over...
Poll: Ok, then, who wants more???
A. Yes
B. No
C. Not sure
Time for Convergence!!!

Combining Web 2.0 and Other Online Technology Trends (Twelve Examples)

1. Flat Schools and Flat Classroom Projects!!!

2. Michelle Selinger, ALT-C Keynote, September 2007, Univ of Nottingham

3. Breeze in Higher Education

4. YouTube Research Group in Facebook
5. Elliott Masie, Podcast + Video + Transcript
Learning TRENDS by Elliott Masie

6. Archive Last Lectures
(Randy Pausch, Carnegie Mellon University)

7. Combining The Web 2.0 (e.g., Second Life, Blogging, and Photo Posting)
Stephen Mandelbrot

8. Indexing Sounds in Cities with Google Maps

9. Cluster Maps (who is reading your blog or using your product): Blog of Will Richardson, famous K-12 blogger (left) and Learning Theories Book of Michael Orey, Univ of Georgia (Right)

10. Vlogging (Video Blogging)
e.g., Andy Calvin's Waste of Bandwidth
Michael L. Wesch, Kansas State, The Machine is Using Us
11. Serious Games Blog with video of Wikipedia and Mahalo Founders and Google scanning people in background

12. You Ustreamed my Ustream: Now that's a Twitter of an Idea

It is both Nature AND Nurture as well as PEOPLE!!! Technology is just part of the Equation

Technology  Pedagogy

People, Society, Culture, etc.

Try the R2D2 Method!!!
Try TEC-VARIETY!!!

Sample papers at: http://www.publicationsshare.com/
Archived talks at: http://www.trainingshare.com/